

Gaps to bridge: misalignment between perception, reality and actions in obesity

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Abstract

Aims: Despite increased recognition as a chronic disease, obesity remains greatly underdiagnosed and undertreated. We aimed to identify international perceptions, attitudes, behaviours and barriers to effective obesity care in people with obesity (PwO) and healthcare professionals (HCPs).

Methods: An online survey was conducted in 11 countries. Participants were adults with obesity and HCPs primarily in direct patient care.

Results: 14,502 PwO and 2,785 HCPs completed the survey. Most PwO (68%) and HCPs (88%) agreed that obesity is a disease. However, 81% of PwO assumed complete responsibility for their own weight loss and only 44% of HCPs agreed that genetics were a barrier. There was a median of 3 (mean 6) years between the time when PwO started struggling with excess weight or obesity and when they first discussed their weight with an HCP. Many PwO were concerned about the impact of

excess weight on health (46%) and were motivated to lose weight (48%). Most PwO (68%) would like their HCP to initiate a conversation about weight and only 3% were offended by such a conversation. Among HCPs, belief that patients have little interest/motivation for weight management may constitute a barrier for weight management conversations. When discussed, HCPs typically recommended lifestyle changes; but more referrals and follow-up appointments are required.

Conclusions: Our international dataset reveals a need to increase understanding of obesity and improve education on its physiological basis and clinical management. Realisation that PwO are motivated to lose weight offers an opportunity for HCPs to initiate earlier weight management conversations.

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Introduction

Obesity is a serious, chronic relapsing disease with high prevalence and a substantial unmet medical need.^{1,2} This complex disease is influenced by multiple factors including genetics, physiological factors, psychological issues and environmental variables (physical and social), and affects people of all ages and regions.²⁻⁴ Obesity is associated with multiple complications and an increased risk of disability and mortality.⁵⁻⁷ People living with obesity experience stigma, discrimination and a negative impact on both mental and health-related quality of life.^{4,7,8}

Treatment guidelines for people with obesity (PwO) typically recommend lifestyle interventions with addition of pharmacotherapy if response to dietary, physical activity and behavioural changes alone is insufficient to reach or maintain the recommended goal of 5–10% body weight loss.⁹⁻¹⁵ Bariatric surgery should be considered for severe cases (body mass index [BMI] ≥ 40 kg/m² or ≥ 35 kg/m² with obesity-related complications), and may be considered for PwO (BMI ≥ 30 kg/m²) with poorly controlled type 2 diabetes.⁹⁻¹⁵ Despite the availability of these guidelines, in practice PwO experience variable care.¹⁶⁻¹⁸ The Awareness, Care, and Treatment In Obesity maNagement (ACTION) survey study conducted in the US identified low rates of obesity diagnosis and management.¹⁹ In another survey of 1,506 healthcare professionals (HCPs) in the US, most (84%) demonstrated limited knowledge of obesity treatment guidelines.²⁰ An international study of 335 HCPs suggested a disconnect between HCPs' confidence in their ability to manage patients with excess weight and effectiveness in achieving weight loss goals.²¹

To improve the quality of, and access to, obesity care globally, a better understanding of the disease and the way those with obesity are currently (and should be) managed is required. The objective of the ACTION International Observation (ACTION-IO) study was to identify the perceptions, attitudes and behaviours of PwO and HCPs and assess the potential barriers to effective obesity care on an international scale. Here we report the primary results from ACTION-IO which, to our knowledge, is the largest international survey of PwO and HCPs to date.

Methods

Study design and participants

ACTION-IO was a cross-sectional, non-interventional, descriptive study that collected data by an online survey conducted by a third-party vendor (KJT Group [Honeoye Falls, NY, USA]) utilising existing databases/panels in 11 countries across different world regions (Australia, Chile, Italy, Israel, Japan, Mexico, Saudi Arabia, South Korea, Spain, UK and UAE) between June 4, 2018 and October 15, 2018. It was intended to also include Brazil, but it was not possible to obtain local ethics committee approval within the required timelines.

Eligible PwO were 18 years or older and resident in a participating country, with a current BMI (based on self-reported height and weight) of at least 30 kg/m², or at least 25 kg/m² in Japan and South Korea (as per country-specific definitions of obesity).²² PwO were excluded if they declined to provide income (with the exception of Mexico as required by the local ethics committee) or race/ethnicity (Australia and UAE only), were pregnant, participated in intense fitness or body building programmes or had significant, unintentional weight loss in the past 6 months. Eligible HCPs were medical practitioners in a participating country, in practice for 2 years or more, with at least 70% of time in direct patient care and who had seen 100 or more patients in the past month, at least 10 of whom had a BMI of at least 30 kg/m² (or 25 kg/m² in Japan and South Korea). HCPs specialising in general, plastic or bariatric surgery were excluded.

All respondents provided electronic informed consent prior to initiation of the screening questions and survey. A local ethics committee/independent review board approved the questionnaires in Australia, Israel, Mexico, Saudi Arabia, South Korea, Spain, UAE and the UK, where such approval was required. For Chile, Italy and Japan, ethical approval was determined to be non-essential for a study of this nature based on regulatory standards and precedent. The study complied with all laws and regulations regarding management of personal information as required by the participant's country of residence and the European General Data Protection Regulation. The study was conducted in accordance with the Guidelines for Good Pharmacoepidemiology Practices²³ and is registered with ClinicalTrials.gov, number NCT03584191.

Survey development and pre-testing

Two questionnaires, one for PwO and one for HCPs (Appendix pp 22–133), were developed by an international steering committee of obesity experts (representing primary care, medical specialities and psychology) from the participating countries, plus three medical doctors employed by the sponsor (Novo Nordisk). The questionnaires were based on those used by the ACTION US¹⁹ and ACTION Canada studies,²⁴ with minor modification or removal of some original questions to reduce the survey length, increase data quality and ensure questions were relevant to the study objectives. KJT Group conducted 60-minute web-assisted pretests with four PwO and four HCPs in each country: participants took the survey online whilst speaking with a moderator by telephone, or in-person for Saudi Arabia, UAE, Japan and South Korea. This was to assess clarity, face validity and relevance of the questions. Surveys were designed to facilitate comparisons within and across respondent types.

Procedures

KJT Group oversaw all aspects of data collection and reporting. Data were collected through an online survey programmed by KJT Group using Decipher Survey Software (FocusVision Worldwide

Inc., Stamford, CT, USA). To reduce PwO sampling bias and ensure the group was largely representative of the general population, the outbound sample was sent according to pre-determined demographics targets based on gender, age, income, race/ethnicity (in select countries) and region. Targets were established based on data from the 2011 International Standard Classification of Education and the US Census Bureau, International Data Base and other public data. Prior to participation, respondents were blinded to the specific study goals, being informed that the purpose was “to determine treatment experiences of patients with a specific condition”. All individuals could access the first part of the survey, and then an initial set of screening questions determined eligibility based on the demographic targets; subsequently, only respondents who had obesity (as determined from their self-reported height and weight) and who met the other eligibility requirements as detailed in the ‘Study design and participants’ section proceeded into the full survey. Demographic targets were monitored throughout data collection to ensure population representativeness.

Respondents were compensated for their time and mostly recruited via online panel companies to whom they had given permission to be contacted for research purposes (Appendix p 2). Respondents were recruited through email where possible, with telephone and in-person recruitment also used for PwO in Saudi Arabia and UAE and HCPs in Saudi Arabia, UAE, Japan, South Korea, Israel, Chile and Mexico. Respondents completed the survey in the native language of their country. In-person administration of the online survey was permitted for PwO in Saudi Arabia and UAE and for HCPs in Saudi Arabia, UAE, Japan, South Korea, Israel, Chile and Mexico (Appendix p 2). All respondents could suspend taking the survey at any time and for any reason in any part of the survey. Participants were only allowed to complete the survey once, as assessed by prior online consent and digital fingerprinting (Appendix p 2). To avoid bias, questionnaire items were carefully phrased, presented in the same order for each respondent and items in a list were displayed alphabetically, categorically, chronologically or randomly as relevant for each response set.

Outcomes

Outcomes were measured by multiple item selection (weight loss motivators, effective weight loss methods, types of weight management goals, most helpful information for patients for weight loss, responsibility for improving health of PwO, most helpful support for weight loss and ways information is received on weight loss management), numeric response (proportion of PwO who made a serious weight loss effort), single item selection (response to weight loss discussions), end-anchored 5-point Likert agreement scales (attitudes to obesity, attitudes toward prescription weight loss medication and surgery, weight loss barriers, obesity and weight management, and the degree to which healthcare and society is meeting the needs of PwO), fully anchored 5-point Likert scales

(effectiveness of guidelines for treating obesity) and by ranking (top factors for improving weight loss outcomes); some of these will be published separately.

Analysis

The target sample size based on 12 participating countries was 19,700 completed surveys, comprising 16,500 PwO (750–2,000 per country) and 3,200 HCPs (200–300 per country; 1,600 primary care professionals [PCPs] plus 1,600 non-PCP specialties), to balance statistical power, recruitment feasibility and cost.

Analysis of de-identified data was conducted by KJT Group using SPSS (IBM, version 23.0), Stata (StataCorp LLC, version IC 14.2) and Excel (Microsoft, version 2016). Data were summarised using univariate descriptive statistics (means, medians, frequencies), and tests of differences (chi square, t-tests) within PwO or HCP respondent types were performed. Statistical significance was set at $P < 0.05$, using 2-tailed tests. Adjustment for multiple testing was not undertaken as this research was exploratory and descriptive in nature. Only data from those who completed the survey were included in the analyses.

The final PwO sample, including those failing to qualify for the survey, was weighted to representative demographic targets within each country for age, gender, household income, education and region (Appendix p 3). HCP data were not weighted.

Results

A total of 14,502 PwO and 2,785 HCPs completed the survey (**Table 1; Supplementary Figure S1**) as per the target sample size for 11 participating countries. The mean response rate was 20% for PwO and 17% for HCPs; the mean eligibility rate was 19% for PwO and 61% for HCPs; the mean completion time was 28 minutes for PwO and 35 minutes for HCPs (Appendix p 5).

Sixty-eight per cent of PwO and 88% of HCPs agreed with the statement that obesity is a chronic disease (**Supplementary Figure S2A**). Most PwO (82%) and HCPs (76%) believed that obesity has a large impact on overall health (**Supplementary Figure S2B**). In comparison, 75–85% of PwO and 82–93% of HCPs stated that diabetes, stroke, cancer or chronic obstructive pulmonary disease has a large impact on overall health. Despite recognising obesity as a disease that impacts overall health, most PwO assumed full responsibility for weight loss (81%) and considered lifestyle a key factor in their struggle with obesity (63%; **Figure 1, items 1–2**; see **Supplementary Figure S3** for complete data). Thirty per cent of HCPs also placed the responsibility for weight loss on PwO, and 79% agreed that their patients would need to completely change their lifestyle to lose weight. Only 31% of HCPs

thought their patients were motivated to lose weight, whereas 48% of PwO said they were motivated to lose weight (**Figure 1, item 4**) and only 20% of PwO had no plans for weight loss within the next 6 months (**Supplementary Figure S4**). Most PwO and HCPs considered unhealthy eating habits (62% PwO; 89% HCPs) and lack of exercise (73% PwO; 88% HCPs) as barriers to weight loss, whereas fewer than half considered the genetic factors underlying obesity (33% PwO; 44% HCPs) to be a barrier (**Supplementary Figure S5, items 1, 2 and 15**).

Eighty-one per cent of PwO stated they had made at least one serious weight loss effort in the past (**Figure 2A**). Conversely, on average, HCPs reported that only 35% of their patients with obesity had made a serious weight loss effort (**Figure 2B**). Of patients who had made a serious weight loss attempt in the past year, the mean proportion defined by HCPs as responding successfully was 30% (**Supplementary Figure S6**). A substantial proportion of PwO (62%) believed they could lose weight if they set their mind to it (**Figure 1, item 3**). However, many PwO struggled to lose weight and to maintain weight loss (**Figure 2C,D**); only 37% of PwO had a self-reported weight loss of at least 5% body mass over the past 3 years, and of those, only 29% were able to maintain the weight loss for at least 1 year (11% of PwO total).

Only about half of all PwO had discussed their weight with an HCP in the past 5 years (**Figure 3A**). It took a median of 3 years and mean of 6 years between the time when PwO said they first started struggling with excess weight or obesity and when they first had a weight management conversation with an HCP (**Figure 3B**). Moreover, 46% of PwO who discussed weight with an HCP initiated the conversation themselves (**Supplementary Figure S7A**). In contrast, on average, HCPs reported discussing weight with 68% of their patients with obesity with the patient initiating the conversation only one third of the time (**Supplementary Figure S7B**). The main reason HCPs provided for initiating a weight management conversation was obesity-related complications (**Supplementary Figure S8**).

Among PwO who had discussed their weight with an HCP in the past 5 years, 67% had been diagnosed with obesity in the past (36% of PwO in total; **Figure 3A**). On average, HCPs informed their patients with obesity that they had a diagnosis of obesity 75% of the time; 6% of HCPs never informed their patients of a diagnosis of obesity (**Supplementary Figure S9**). Only 39% of PwO who had discussed their weight with an HCP had a follow-up appointment scheduled (21% of PwO in total; **Figure 3A**); however, 94% of PwO reported attending or planning to attend a follow-up appointment if scheduled (**Supplementary Figure S10A**). On average, HCPs scheduled follow-up appointments with 44% of their patients for obesity; 55% of HCPs said patients kept these follow-up appointments always or most of the time (**Supplementary Figure S10B**).

Among all PwO, 41% would set themselves an ambitious weight loss target of 11–20% (**Supplementary Figure S11A**; overall mean 16%). PwO reported receiving similar recommended

targets from HCPs (**Supplementary Figure S11B**; overall mean 17%). The weight management goals most frequently selected by PwO were reducing the risks associated with excess weight/preventing a health condition (46%) and to improve appearance (33%; **Supplementary Figure S12**).

The most frequent methods for managing weight discussed between PwO and HCPs were general improvements in eating habits and general increases in physical activity level, whereas specific diet or exercise programmes, tracking, weight loss medications and bariatric surgery were less likely to have been discussed (**Supplementary Figure S13A**). Referrals to specialists were also recommended infrequently (**Supplementary Figure S13A**). General improvements in eating habits and physical activity were perceived to be highly effective by most PwO and HCPs; however, more PwO than HCPs perceived weight loss medications and bariatric surgery to be effective (**Supplementary Figure S13B**).

Thirty-five per cent of PwO found conversations with an HCP about weight management very or extremely helpful (**Supplementary Figure S14**), and 68% of PwO liked (or would like) their HCP to bring up weight during their appointments (**Figure 3C**). Conversations with HCPs about weight management can be quite motivating and positive for PwO, with 64% reporting positive types of feelings after a weight loss conversation (**Figure 3D**). Negative types of feelings after a weight loss conversation were reported by 44% of PwO. However, only 3% of PwO reported feeling offended (**Figure 3D**).

The top reason PwO provided for not discussing weight management with their HCP was a belief that it was their own responsibility to manage their weight (selected by 44% of PwO vs 9% of HCPs), whereas the top reason HCPs provided for not discussing obesity with a patient was if they perceived the patient to be not interested in losing weight (selected by 71% of HCPs vs 7% of PwO; **Figure 4**; see **Supplementary Figure S15** for complete data). More than half of HCPs indicated that the limited appointment time would also be a factor in not having a weight loss conversation (**Figure 4**). Data for other outcomes are presented in **Supplementary Figures S16–S19**.

Discussion

The ACTION-IO study identified several key gaps in obesity care and misalignment between the perceptions and attitudes of PwO and HCPs. PwO and HCPs stated they recognised obesity as a chronic disease; however, most PwO assumed complete responsibility for weight loss. Furthermore, both PwO and HCPs put emphasis on lifestyle-related factors rather than biological factors, including genetic predisposition, as significant barriers to weight loss. The results suggest many PwO are concerned about the impact of their excess weight on health and are making serious efforts to lose weight, but have a limited response on their own. In contrast, HCPs' belief that PwO are not

interested or motivated to lose weight may be preventing weight loss conversations. This might reflect the actual experience of the HCPs or represent an unconscious negative bias.

Obesity is recognised as a chronic disease by several national and international organisations, including the World Obesity Federation,¹ European Association for the Study of Obesity,¹¹ The Obesity Society²⁵ the American Medical Association²⁶ and the UK Royal College of Physicians.²⁷ Obesity has a genetic predisposition and specific pathophysiological alterations, and is not just due to lifestyle.^{3,4} However, only 26% of PwO in this study agreed that their HCP has a responsibility to actively contribute to their weight loss efforts. Other studies have previously highlighted disconnection between perceptions and actions. In a study in Australia, 78% of PwO agreed that their HCP had a role in their weight management, but only 58% would ask their HCP for weight loss advice.²⁸

Compared with the US ACTION study, a smaller proportion of PwO in this international study had discussed their weight with an HCP in the past 5 years (US ACTION 71%, ACTION-IO 54%); but of those, a greater proportion had received a diagnosis of obesity (US ACTION 55%, ACTION-IO 67%).¹⁹ A similar proportion of PwO in the US and internationally thought their weight loss was completely their responsibility (US ACTION 82%, ACTION-IO 81%), and this was the top reason for PwO not initiating a weight management conversation with an HCP in both studies.¹⁹ In the US, HCPs cited lack of time as a top reason for not initiating weight loss conversations,¹⁹ whereas internationally, HCPs selected limited patient motivation or patient disinterest in losing weight as top reasons, in stark contrast to PwO responses and reflecting an educational need.

A potential barrier to effective obesity care identified here was the length of time (years) between when PwO started struggling with their weight and when they first had a weight management conversation with an HCP. Decreasing this time gap could reduce the complications of obesity experienced by PwO and ultimately lessen the economic cost of the disease.^{6,7} Appropriate and supportive weight management conversations should be initiated earlier as a preventive approach, before complications occur. Jointly agreeing a patient has overweight or obesity with a BMI calculation in the context of their personal health profile may be an effective way to initiate such a conversation.²⁹ Discussing the genetic component and biological contributors to obesity^{4,30} with the patient, using explanatory illustrations that are tailored to the patient's knowledge base, where relevant, could help diminish self-blame and encourage continued dialogue and receptivity of support from the HCP. Recognising positive patient responses to conversational cues may allow for the provision of therapeutic intervention (or development of a management plan).^{9,15,31}

Our data suggest that PwO are motivated for weight loss efforts and would like for their HCP to initiate a conversation about weight. This is consistent with a UK study showing that most patients found discussing their weight with an HCP appropriate and helpful.³² As a chronic disease, there is

also a need to improve referrals and follow-up appointments for management of obesity. Part of this effort will mean eradicating the prevalent stigmatising attitudes highlighted in prior studies³³ and HCPs' misperception that PwO are not motivated, shown here. The weight loss targets reported in this study were higher than achievable for most PwO with existing non-surgical interventions, as demonstrated by the low proportion of PwO who had achieved and maintained a weight loss of at least 10%. Setting realistic and achievable weight loss goals could help manage expectations, with collaborative communication and more manageable targets potentially providing encouragement for continued patient engagement. Guidelines suggest a weight loss goal of 5–10%, depending on the severity of obesity, over a period of 6 months.¹⁰ However, even a 3% to 5% reduction in weight can provide clinically meaningful health benefits.³⁴ Opportunities for improving obesity management include: improving education of PwO, HCPs, HCP students, governments and the public on the biological basis of obesity and challenging the misperception that obesity is under a person's control;³³ obtaining unanimous recognition of obesity as a chronic progressive disease; addressing HCPs' attitudes towards PwO; promoting initiation of helpful weight loss conversations earlier; improving education of HCPs and HCP students on the clinical management of obesity (effective advice on diet, physical activity, medical and surgical therapy) and the value of a multidisciplinary approach;^{9–15} and increasing the frequency of diagnosis, follow-up appointments and referrals for effective evidence-based treatment. Obesity is an adiposity-based chronic disease, the whole complexity of which cannot be reflected by BMI alone,³⁵ and this may contribute to the reluctance of HCPs to provide a diagnosis of obesity. However, as recommended by the current clinical practice guidelines, BMI is used for the initial assessment and diagnosis of obesity, taking into account factors such as age, ethnicity and muscularity.^{9–15}

Limitations of this study include the cross-sectional and descriptive nature, and reliance on self-reported height and weight (which could underestimate BMI) and accurate respondent recall. The fairly low response rates were typical for survey-based research (Appendix p 5). Low response rates can affect sample representativeness and are a known limitation for this type of study. Internet access could also have restricted participation in some countries. Strengths include the large number of respondents, international nature of the study and scientific rigor in the survey design and implementation, including the stratified sampling to provide a representative general population group.

Overall, our data suggest that PwO are motivated to lose weight and there is an opportunity for HCPs to initiate earlier, effective weight loss conversations with minimal fear of offence. PwO may not recognise the need to reduce excess weight until it has an impact on their health, further supporting the requirement for HCPs to raise the topic of weight before such obesity-related complications occur. Our study also reveals a global need for greater education for both PwO and HCPs on the biological

basis and clinical management of obesity, and for a more positive HCP attitude towards initiating weight discussions and management.

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Conflict of interest

All authors had travel expenses covered by Novo Nordisk to attend author meetings during the conduct of the study. I. D. C. reports personal fees from Novo Nordisk (as chair of the ACTION-IO steering committee) during the conduct of the study, grants from Novo Nordisk, Bristol-Myers Squibb, Pfizer, Australian Eggs outside the submitted work, and personal (lecture) fees from Servier Laboratories and Novo Nordisk outside the submitted work. A. A. reports financial support from Novo Nordisk to attend an obesity conference during the conduct of the study, and personal (consultancy) fees and non-financial support from Novo Nordisk outside the submitted work. W. C. reports personal (consultancy and speaker) fees from Novo Nordisk, EMS, Germed Pharma and Janssen Pharmaceutica outside the submitted work. A. C. reports personal fees from Abbott, Novo Nordisk, Teva Pharmaceutical Industries and Saval Pharmaceuticals during the conduct of the study; A. C. is a member of the Strategic Centre for Obesity Professional Education (SCOPE) of the World Obesity Federation and is a SCOPE International Fellow. D. D. reports personal fees (consultancy and speaker) from Novo Nordisk during the conduct of the study and personal fees (consultancy and speaker) from Novo Nordisk and Teva Pharmaceutical Industries outside the submitted work. C. H. reports financial support from Novo Nordisk to attend an obesity conference during the conduct of the study, grants from the Rona Marsden Fund at Fakenham Medical Practice and personal fees from Orexigen Therapeutics, Consilient Health, Nestlé and Ethicon outside the submitted work; C. H. was previously a member of the World Obesity education committee, is a current member of Association for the Study of Obesity (ASO) and is involved in meetings to facilitate recognition of obesity as a disease in the UK. R. N. reports financial support from Novo Nordisk to attend an obesity conference during the conduct of the study, and personal (consultancy and speaker) fees from Novo Nordisk outside the submitted work. G. R. reports personal (consultancy) fees from Apollo Endosurgery (previously known as Allergan), Medtronic (previously known as Covidien), mdBriefCase Global & Australia, NSW Health and the Australian Department of Health, personal fees and non-financial support (consultancy/meetings and travel expenses) from the Royal Australian College of General Practitioners (RACGP), Novo Nordisk and iNova Pharmaceuticals, outside the submitted work; G. R. is Chair of the RACGP Obesity Management Network. J. S. reports personal (consultancy) fees from Novo Nordisk outside the submitted work. P. S. reports personal fees from Novo Nordisk during the

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Author contributions

All authors contributed to the design of the study. All authors participated in interpretation of the data and drafting and revision of the manuscript. All authors reviewed and approved the final, submitted version.

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Figure legends

FIGURE 1 PwO and HCP agreement with statements regarding attitudes towards obesity. Rated on a scale 1–5. Abbreviations: HCP, healthcare professional; PwO, people with obesity

FIGURE 2 Weight loss efforts and response to intervention. (A) Number of past serious weight loss attempts (PwO). (B) Proportion of patients considered to have made a serious weight loss effort reported by HCPs. (C, D) PwO extent and maintenance of weight loss in last 3 years at threshold of (C) 5% or (D) 10% of total body weight. HCPs = green; PwO = orange. Abbreviations: HCP, healthcare professional; PwO, people with obesity

FIGURE 3 Weight management conversations and outcomes. (A) Proportion of PwO having weight management discussions with an HCP, obesity diagnoses and follow-up appointments/calls. (B) Of PwO who had discussed their weight with a HCP in the past 5 years, proportion who had the discussion less than 2 years, 3–5 years, 6–10 years or more than 10 years after they first started struggling with their weight. (C) Proportion of PwO who like or would like their HCP to bring up weight during appointments. (D) PwO feelings after discussing their weight with an HCP. HCPs = green; PwO = orange. Abbreviations: HCP, healthcare professional; PwO, people with obesity

FIGURE 4 Reasons for not discussing weight with an HCP (PwO, orange) or patient (HCPs, green), with at least 10% difference between PwO and HCPs. See Supplementary Figure S15 for all reasons. HCPs = green; PwO = orange. Abbreviations: HCP, healthcare professional; PwO, people with obesity

TABLE 1 Sample demographics and characteristics

	PwO (<i>n</i> = 14,502)	HCPs (<i>n</i> = 2,785)
Age, years	43 (18–88)	48 (26–74)
Gender		
Male	7,438 (51%)	1,958 (70%)
Female	7,050 (49%)	827 (30%)
Other	14 (<1%)	0
Country		
Australia	1,000 (7%)	200 (7%)
Chile	1,000 (7%)	200 (7%)
Italy	1,501 (10%)	302 (11%)
Israel	750 (5%)	169 (6%)
Japan	2,001 (14%)	302 (11%)
Mexico	2,000 (14%)	400 (14%)
Saudi Arabia	1,000 (7%)	200 (7%)
South Korea	1,500 (10%)	200 (7%)
Spain	1,500 (10%)	306 (11%)
UK	1,500 (10%)	306 (11%)
UAE	750 (5%)	200 (7%)
BMI classification for Australia, Chile, Italy, Israel, Mexico, Saudi Arabia, Spain, UK and UAE [†]		
Respondents	11,001 (100%)	1,778 (78%)
Underweight or healthy range (<25 kg/m ²)	–	971 (55%)
Overweight (25–29.9 kg/m ²)	–	668 (38%)
Obesity Class I (30–34.9 kg/m ²)	6,930 (63%)	103 (6%)
Obesity Class II (35–39.9 kg/m ²)	2,416 (22%)	12 (1%)
Obesity Class III (≥40 kg/m ²)	1,655 (15%)	24 (1%)
BMI classification for Japan and South Korea [‡]		
Respondents	3,501 (100%)	418 (83%)
BMI <25 kg/m ²	–	325 (78%)

Obesity Class 1 (25–29.9 kg/m ²)	2,696 (77%)	83 (20%)
Obesity Class 2 (30–34.9 kg/m ²)	530 (15%)	9 (2%)
Obesity Class 3 (35–39.9 kg/m ²)	134 (4%)	0
Obesity Class 4 (≥ 40 kg/m ²)	141 (4%)	1 (<1%)
Number of comorbidities		
0	3,829 (26%)	
1	3,610 (25%)	
2	2,868 (20%)	
3	2,060 (14%)	
≥ 4	2,136 (15%)	
HCP category		
PCP		1,415 (51%)
Specialist		1,370 (49%)
Diabetologist/endocrinologist		488 (18%)
Cardiologist		301 (11%)
Internal medicine (non-PCP)		272 (10%)
Gastroenterologist		160 (6%)
Obstetrician/gynaecologist		133 (5%)
Nutritionist (Italy only)		9 (<1%)
Bariatrics/obesity medicine [§]		5 (<1%)
Hepatologist (Australia only)		2 (<1%)
Obesity specialist [¶]		
Yes		1,868 (67%)
No		917 (33%)

Abbreviations: BMI, body mass index; HCP, healthcare professional; PCP, primary care physician.

Data are median (range) or number (%) and are reported for the final unweighted sample.

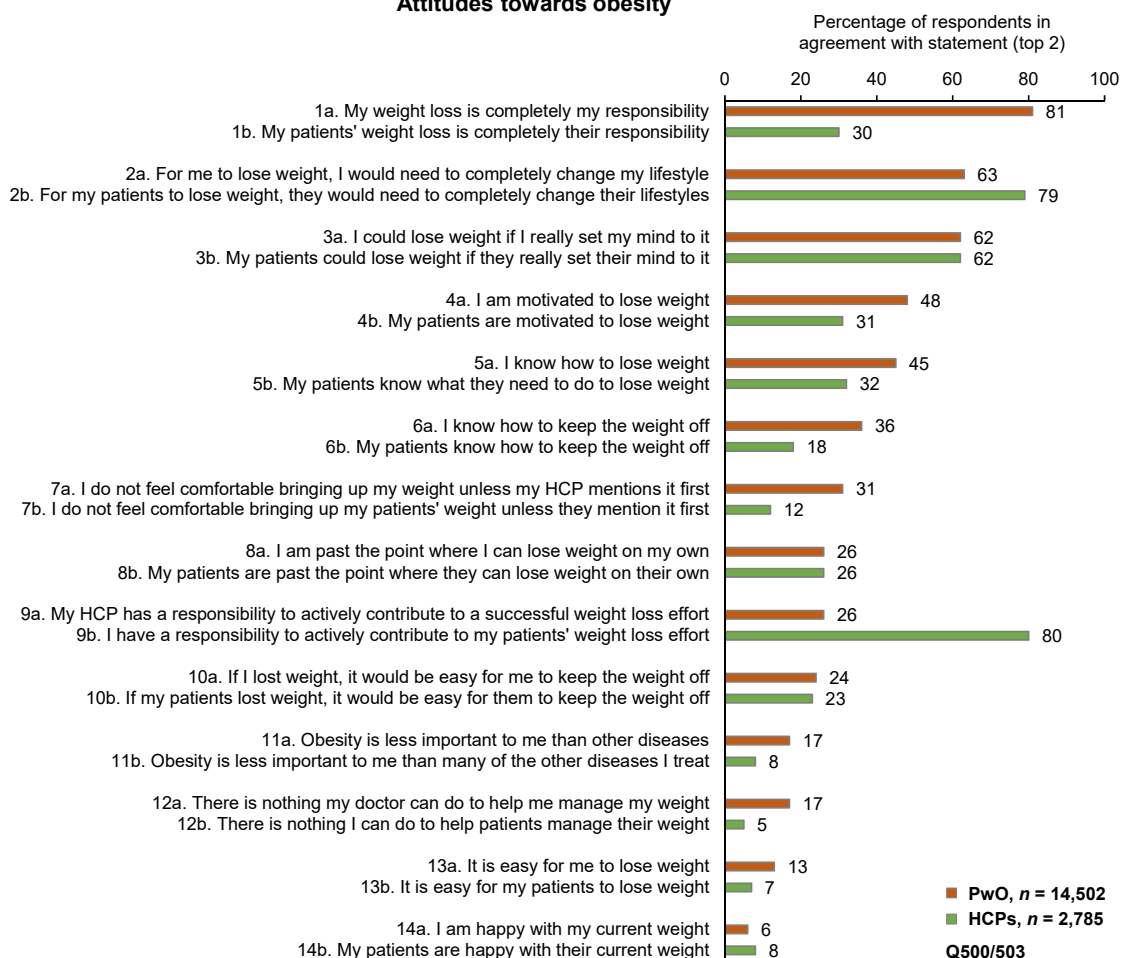
[†]Classes I (BMI 30–34.9 kg/m²), II (BMI 35–39.9 kg/m²) and III (BMI ≥ 40 kg/m²) apply to Australia, Chile, Italy, Israel, Mexico, Saudi Arabia, Spain, UK and UAE.

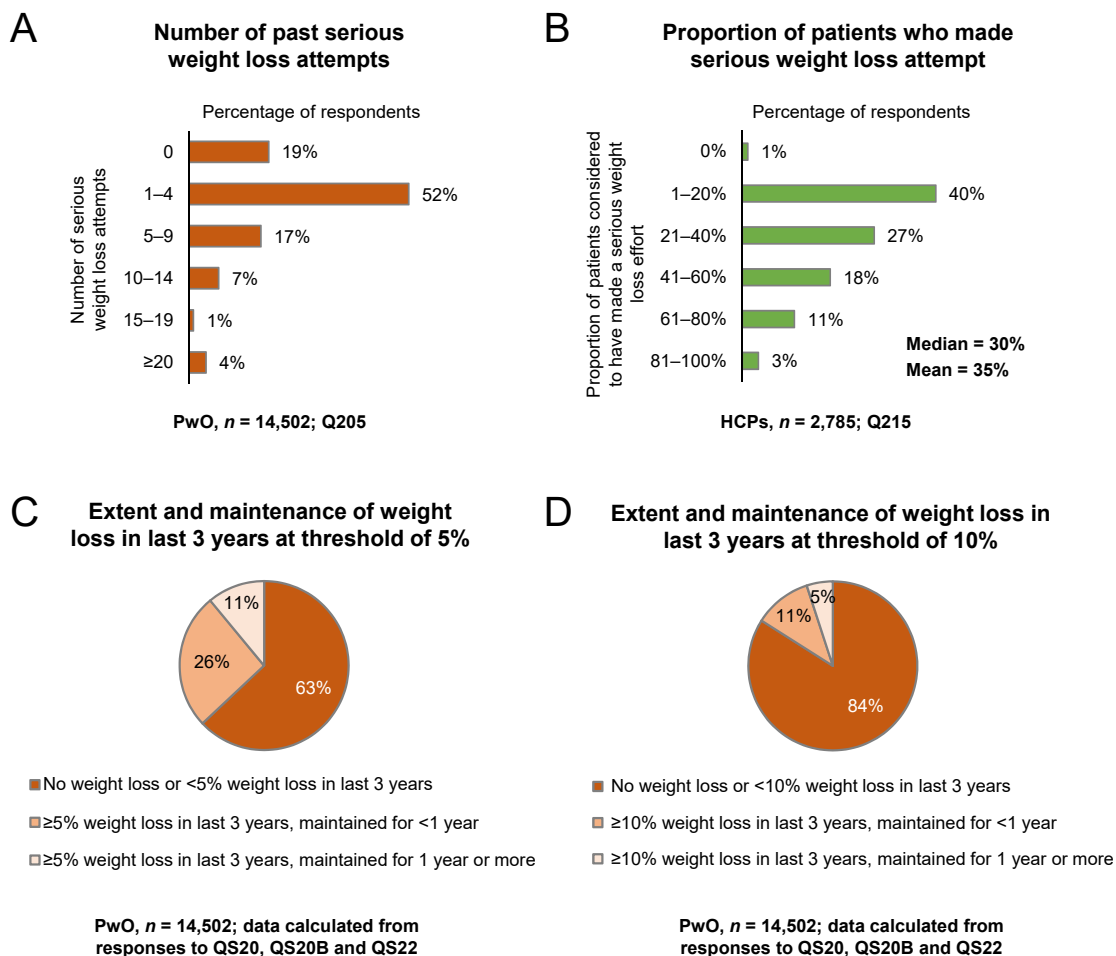
[‡]Classes 1 (BMI 25–29.9 kg/m²), 2 (BMI 30–34.9 kg/m²), 3 (BMI 35–39.9 kg/m²) and 4 (BMI ≥ 40 kg/m²) apply to Japan and South Korea.

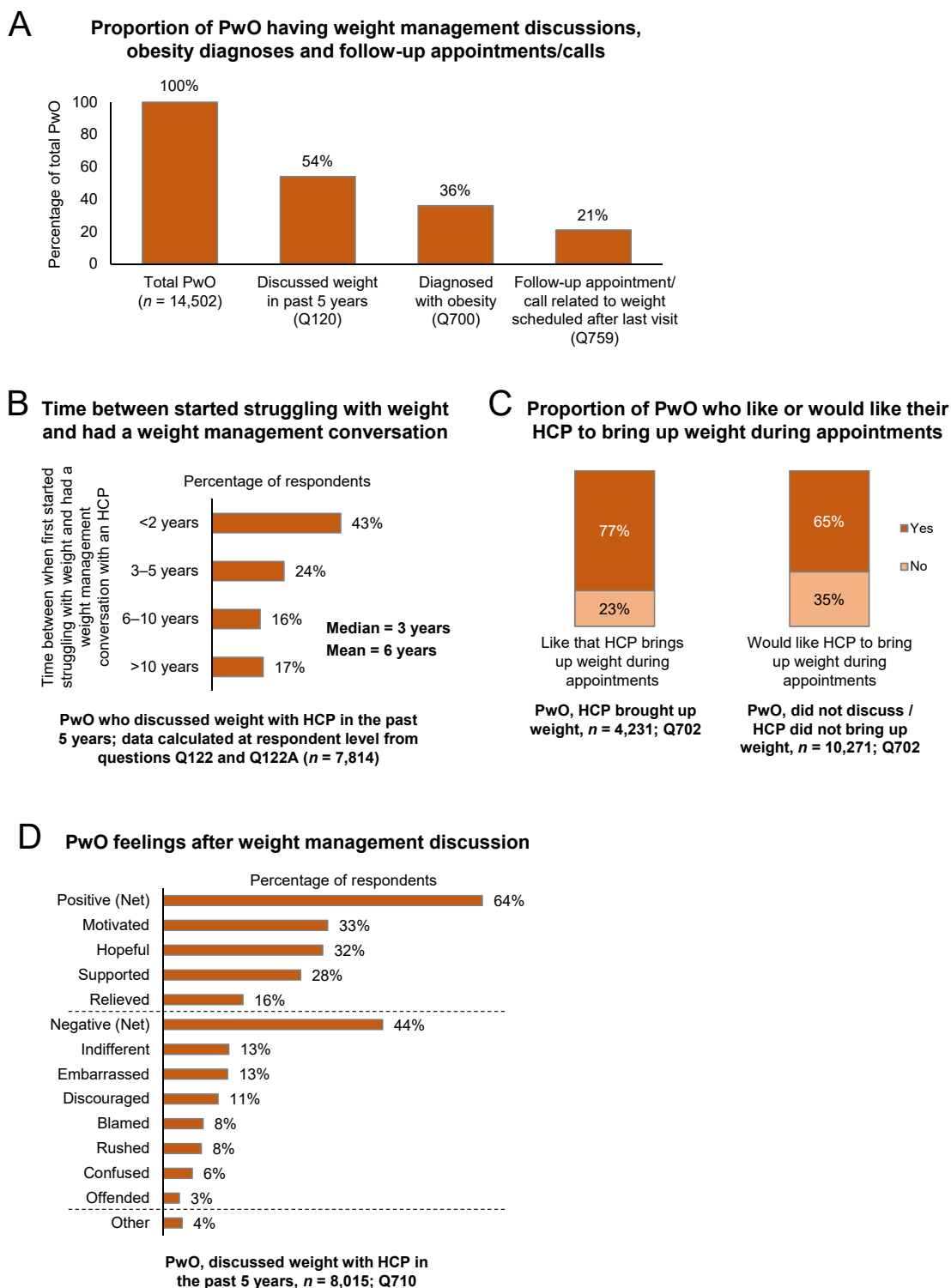
[§]Bariatric surgeons were ineligible per protocol pre-specified criteria.

[¶]A physician who meets at least one of the following criteria: at least 50% of their patients are seen for obesity/weight management, or has advanced/formal training in treatment of obesity/weight management beyond medical school, or considers themselves to be an expert in obesity/weight loss management, or works in an obesity service clinic.

Attitudes towards obesity







Reasons for not discussing weight

